

Samples of other press attention to various stories.

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Path Traced

Smoking Not Cause But 'Step' To Cancer, Researcher Says

Heavy Cigaret Use Provides 'Irritant,'
Air Pollution Expert Tells Pitt Forum

By WERNER SIEMS

Heavy cigarette smoking is the irritant that supplies one necessary step along the path to lung cancer.

The smoke itself is not the cancer-causing agent.

This, in a nutshell, is the explanation offered by

Dr. Paul Kotin, University of Southern California pathologist and a leading researcher in air pollution.

Dr. Kotin said the male sex hormone may be to blame for the much higher rate of lung cancer among men than women.

"I think we are guilty of over-simplification if we talk about a cause of cancer in the same way we talk about a cause of pneumonia," Dr. Kotin told a seminar in the University of Pittsburgh Graduate School of Public Health yesterday.

"Cancer is not 'caused'. It is the end stage in a series of events," he said.

Dr. Kotin traced these steps as they have been revealed through his research on laboratory animals.

Irritate Membranes

He showed how dust and soot-borne pollutants in the air irritate the membranes of the throat and bronchioles in the lungs until they cause a change in mucous secretion and peeling and regeneration of the tissues.

Repeated irritation by pollutants causes alteration of the membranes along more "primitive" lines and eventually through such contact cancer-causing chemicals are stripped from the dust and soot particles.

Once freed they get into the cells and become "biologically active," sparking the growth of tumors.

Cigaret smoke, Dr. Kotin said, contains the same cancer-causing chemicals that are produced by gasoline engines, industrial pollution and heating devices. In both cases the chemicals result from incomplete combustion.

But Dr. Kotin does not believe there is enough evidence to trace the disease to invasion by chemicals from cigarettes. He reasons that if these chemicals are responsible the incidence of lung cancer should increase at all levels as the dosage (amount of smoking) goes up.

The incidence, however, is the same for those who smoke two and a half packs a day as it is for those who smoke

two, although their rate is much greater than the pack-a-day smokers.

Supplies Irritant

So Dr. Kotin concludes that cigarette smoking supplies the irritant for two-pack smokers who get lung cancer. Another argument against cigarettes as the prime trigger of the disease, is that non-smokers who get lung cancer generally are the same age as the smoking victims of the disease. If heavy smoking were the cancer agent the cigarette smokers should get the disease earlier.

Still, about 90 per cent of heavy smokers do not develop lung cancer.

Why don't all persons exposed to air pollution get cancer?

Dr. Kotin offered two possible explanations, neither of which has been proven in humans:

- 1—Air pollution contains anti-cancer chemicals produced from the same sources as the cancer agents and possibly blocking their effect.
- 2—The male sex hormone, androgen, in studies with rats determined whether cancer agents entered some types of cells.

"We poor males," said Dr. Kotin, "may have created a one-way street to cancer, but we still don't know."

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